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     (FILE 'HOME' ENTERED AT 09:49:55 ON 13 FEB 2004)

     FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
     LIFESCI' ENTERED AT 09:53:32 ON 13 FEB 2004
L1         11486 S ADENYLATE (A)KINASE?
L2          2883 S HUMAN AND L1
L3        646823 S MITOCHONDRI?
L4           274 S L2 AND L3
L5       6366884 S CLON? OR EXPRESS? OR RECOMBINANT
L6            67 S L4 AND L5
L7            39 DUP REM L6 (28 DUPLICATES REMOVED)
L8             9 S "HMAK"
L9             4 DUP REM L8 (5 DUPLICATES REMOVED)
                 E HILLMAN J L/AU
L10          470 S E3
                 E SHAH P/AU
L11         1520 S E3
L12         1868 S L10 OR L11
L13            3 S L1 AND L12
L14            3 DUP REM L13 (0 DUPLICATES REMOVED)

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 NEWS  3  SEP 09   CA/CAplus records now contain indexing from 1907 to the
                   present
 NEWS  4  DEC 08   INPADOC: Legal Status data reloaded
 NEWS  5  SEP 29   DISSABS now available on STN
 NEWS  6  OCT 10   PCTFULL: Two new display fields added
 NEWS  7  OCT 21   BIOSIS file reloaded and enhanced
 NEWS  8  OCT 28   BIOSIS file segment of TOXCENTER reloaded and enhanced
 NEWS  9  NOV 24   MSDS-CCOHS file reloaded
 NEWS 10  DEC 08   CABA reloaded with left truncation
 NEWS 11  DEC 08   IMS file names changed
 NEWS 12  DEC 09   Experimental property data collected by CAS now available
                   in REGISTRY
 NEWS 13  DEC 09   STN Entry Date available for display in REGISTRY and CA/CAplus
 NEWS 14  DEC 17   DGENE: Two new display fields added
 NEWS 15  DEC 18   BIOTECHNO no longer updated
 NEWS 16  DEC 19   CROPU no longer updated; subscriber discount no longer
                   available
 NEWS 17  DEC 22   Additional INPI reactions and pre-1907 documents added to CAS
                   databases
 NEWS 18  DEC 22   IFIPAT/IFIUDB/IFICDB reloaded with new data and search fields
 NEWS 19  DEC 22   ABI-INFORM now available on STN
 NEWS 20  JAN 27   Source of Registration (SR) information in REGISTRY updated
                   and searchable
 NEWS 21  JAN 27   A new search aid, the Company Name Thesaurus, available in
                   CA/CAplus
 NEWS 22  FEB 05   German (DE) application and patent publication number format
                   changes

 NEWS EXPRESS  DECEMBER 28 CURRENT WINDOWS VERSION IS V7.00, CURRENT
               MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
               AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003
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                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       1.26       1.26

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FILE 'LIFESCI' ENTERED AT 09:53:32 ON 13 FEB 2004
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=> s adenylate (a)kinase?
L1       11486 ADENYLATE (A) KINASE?

=> s human and l1
L2        2883 HUMAN AND L1

=> s mitochondri?
L3      646823 MITOCHONDRI?

=> s l2 and l3
L4         274 L2 AND L3

=> s Clon? or express? or recombinant
   5 FILES SEARCHED...
L5     6366884 CLON? OR EXPRESS? OR RECOMBINANT

=> s l4 and l5
L6          67 L4 AND L5

=> dup rem l6
PROCESSING COMPLETED FOR L6
L7           39 DUP REM L6 (28 DUPLICATES REMOVED)

=> d 1-39 ibib ab

L7   ANSWER 1 OF 39  SCISEARCH  COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER:    2004:41491  SCISEARCH
```

THE GENUINE ARTICLE: 757AA
TITLE: Functional coupling as a basic mechanism of feedback regulation of cardiac energy metabolism
AUTHOR: Saks V A (Reprint); Kuznetsov A V; Vendelin M; Guerrero K; Kay L; Seppet E K
CORPORATE SOURCE: Univ Grenoble 1, Lab Bioenerget, 2280 Rue Piscine, BP53, F-38041 Grenoble 9, France (Reprint); Univ Grenoble 1, INSERM E0221, Lab Fundamental & Appl Bioenerget, Struct & Quantitat Bioenerget Res Grp, Grenoble, France; Natl Inst Chem Phys & Biophys, Lab Bioenerget, Tallinn, Estonia; Univ Innsbruck Hosp, Dept Transplant Surg, A-6020 Innsbruck, Austria; Estonian Acad Sci, Inst Cybernet, Tallinn, Estonia; Univ Tartu, Dept Pathophysiol, Tartu, Estonia
COUNTRY OF AUTHOR: France; Estonia; Austria
SOURCE: MOLECULAR AND CELLULAR BIOCHEMISTRY, (JAN-FEB 2004) Vol. 256, No. 1-2, pp. 185-199.
Publisher: KLUWER ACADEMIC PUBL, VAN GODEWIJCKSTRAAT 30, 3311 GZ DORDRECHT, NETHERLANDS.
ISSN: 0300-8177.
DOCUMENT TYPE: General Review; Journal
LANGUAGE: English
REFERENCE COUNT: 92

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB In this review we analyze the concepts and the experimental data on the mechanisms of the regulation of energy metabolism in muscle cells. Muscular energetics is based on the force - length relationship, which in the whole heart is **expressed** as a Frank Starling law, by which the alterations of left ventricle diastolic volume change linearly both the cardiac work and oxygen consumption. The second basic characteristics of the heart is the metabolic stability - almost constant levels of high energy phosphates, ATP and phosphocreatine, which are practically independent of the workload and the rate of oxygen consumption, in contrast to the fast-twitch skeletal muscle with no metabolic stability and rapid fatigue. Analysis of the literature shows that an increase in the rate of oxygen consumption by order of magnitude, due to Frank - Starling law, is observed without any significant changes in the intracellular calcium transients. Therefore, parallel activation of contraction and **mitochondrial** respiration by calcium ions may play only a minor role in regulation of respiration in the cells. The effective regulation of the respiration under the effect of Frank - Starling law and metabolic stability of the heart are explained by the mechanisms of functional coupling within supramolecular complexes in **mitochondria**, and at the subcellular level within the intracellular energetic units. Such a complex structural and functional organisation of heart energy metabolism can be described quantitatively by mathematical models.

L7 ANSWER 2 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:913280 HCAPLUS
DOCUMENT NUMBER: 139:379453
TITLE: Genes showing altered patterns of **expression** in multiple sclerosis and their diagnostic and therapeutic uses
INVENTOR(S): Dangond, Fernando; Hwang, Daehee
PATENT ASSIGNEE(S): Brigham and Women's Hospital, Inc., USA
SOURCE: PCT Int. Appl., 148 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2003095618	A2	20031120	WO 2003-US14462	20030507	
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
US 2004018522	A1	20040129	US 2003-430762	20030506	
PRIORITY APPLN. INFO.:			US 2002-379284P	P	20020509
			US 2003-430762	A1	20030506

AB The present invention identifies a number of gene markers whose **expression** is altered in multiple sclerosis (MS). These markers can be used to diagnose or predict MS in subjects, and can be used in the monitoring of therapies. In addition, these genes identify therapeutic targets, the modification of which may prevent MS development or progression. Genes were identified by determination of **expression** profiling. A large number of genes showing altered patterns of **expression** were identified, with the most discriminatory genes being those for: phosphatidylinositol transfer protein, inducible nitric oxide synthase, CIC-1 (CLCN1) muscle chloride channel protein, placental bikunin (AMBP), receptor kinase ligand LERK-3/Ephrin-A3, GATA-4, thymopoietin, transcription factor E2f-2, S-adenosylmethionine synthetase, carcinoembryonic antigen, the ret oncogene, a G protein-linked receptor (**clone** GPCR W), GTP- binding protein RALB, tyrosine kinase Syk, LERK-2/Ephrin-B1, ELK1 tyrosine kinase oncogene, transcription factor SL1, phospholipase C, gastricsin (progastricsin), and the D13S824E locus.

L7 ANSWER 3 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER:	2003:942767 HCAPLUS
DOCUMENT NUMBER:	140:40262
TITLE:	Genes expressed in atherosclerotic tissue and their use in diagnosis and pharmacogenetics
INVENTOR(S):	Nevins, Joseph; West, Mike; Goldschmidt, Pascal
PATENT ASSIGNEE(S):	Duke University, USA
SOURCE:	PCT Int. Appl., 408 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003091391	A2	20031106	WO 2002-XB38221	20021112
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
WO 2003091391	A2	20031106	WO 2002-US38221	20021112
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN,				

MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2002-374547P P 20020423
US 2002-420784P P 20021024
US 2002-421043P P 20021025
US 2002-424680P P 20021108
WO 2002-US38221 A 20021112

AB Genes whose expression is correlated with an determinant of an atherosclerotic phenotype are provided. Also provided are methods of using the subject atherosclerotic determinant genes in diagnosis and treatment methods, as well as drug screening methods. In addition, reagents and kits thereof that find use in practicing the subject methods are provided. Also provided are methods of determining whether a gene is correlated with a disease phenotype, where correlation is determined using a Bayesian anal. [This abstract record is one of three records for this document necessitated by the large number of index entries required to fully index the document and publication system constraints.].

L7 ANSWER 4 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:551331 HCAPLUS
DOCUMENT NUMBER: 139:129670
TITLE: Modulation of **mitochondrial** remodeling by BH3 interacting domain death agonist and uses in treating apoptosis
INVENTOR(S): Korsmeyer, Stanley
PATENT ASSIGNEE(S): Dana-Farber Cancer Institute, Inc., USA
SOURCE: PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003057158	A2	20030717	WO 2002-US41789	20021230
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003224986	A1	20031204	US 2002-334006	20021230

PRIORITY APPLN. INFO.: US 2001-345733P P 20011231
US 2002-382207P P 20020521

AB This invention relates generally to methods and compns. for the regulation of apoptosis and novel BH3 interacting domain death agonist, BID, polypeptide variants of BID, and the polynucleotides encoding them for modulating **mitochondrial** remodeling, the release of cytochrome c store in **mitochondrial** cristae and apoptosis. Also disclosed are antibodies that immunospecifically bind to the polypeptide, as well as derivs., variants, mutants, or fragments of the novel polypeptide, polynucleotide, or antibody specific to the polypeptide. Vectors, host

cells, antibodies and **recombinant** methods for producing the polypeptides and polynucleotides, as well as methods for using same are also included. The invention further discloses therapeutic, diagnostic and research methods for diagnosis, treatment, and prevention of apoptosis associated disorders involving these novel **human** nucleic acids and proteins.

L7 ANSWER 5 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:409169 HCAPLUS
DOCUMENT NUMBER: 138:380506
TITLE: Genes that are differentially expressed during erythropoiesis and their diagnostic and therapeutic uses
INVENTOR(S): Brissette, William H.; Neote, Kuldeep S.; Zagouras, Panayiotis; Zenke, Martin; Lemke, Britt; Hacker, Christine
PATENT ASSIGNEE(S): Pfizer Products Inc., USA; Max-Delbrueck-Centrum Fuer Molekulare Medizin
SOURCE: PCT Int. Appl., 285 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003038130	A2	20030508	WO 2002-XA34888	20021031
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
WO 2003038130	A2	20030508	WO 2002-US34888	20021031
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2001-335048P P 20011031
US 2001-335183P P 20011102
WO 2002-US34888 A 20021031

AB The present invention provides mol. targets that regulate erythropoiesis. Groups of genes or their encoded gene products comprise panels of the invention and may be used in therapeutic intervention, therapeutic agent screening, and in diagnostic methods for diseases and/or disorders of erythropoiesis. The panels were discovered using gene expression profiling of erythroid progenitors with Affymetrix HU6800 and HG-U95Av2 chips. Cells from an in vitro growth and differentiation system of SCF-Epo dependent human erythroid progenitors, E-cadherin+/CD36+ progenitors, cord blood, or CD34+ peripheral blood stem cells were analyzed. The HU6800 chip contains probes from 13,000 genes with a

potential role in cell growth, proliferation, and differentiation and the HG-U95Av2 chip contains 12,000 full-length, functionally-characterized genes. [This abstract record is one of two records for this document necessitated by the large number of index entries required to fully index the document and publication system constraints.].

L7 ANSWER 6 OF 39 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2003491047 EMBASE
TITLE: Minireview: Malonyl CoA, AMP-Activated Protein Kinase, and Adiposity.
AUTHOR: Ruderman N.B.; Saha A.K.; Kraegen E.W.
CORPORATE SOURCE: Dr. N.B. Ruderman, Diabetes Unit, Boston Medical Center, 650 Albany Street, X825, Boston, MA 02118, United States. nruderman@medicine.bu.edu
SOURCE: Endocrinology, (2003) 144/12 (5166-5171).
Refs: 57
ISSN: 0013-7227 CODEN: ENDOAO
COUNTRY: United States
DOCUMENT TYPE: Journal; (Short Survey)
FILE SEGMENT: 003 Endocrinology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB An increasing body of evidence has linked AMP-activated protein kinase (AMPK) and malonyl coenzyme A (CoA) to the regulation of energy balance. Thus, factors that activate AMPK and decrease the concentration of malonyl CoA in peripheral tissues, such as exercise, decrease triglyceride accumulation in the adipocyte and other cells. The data reviewed here suggest that this is related to the fact that these factors concurrently increase fatty acid oxidation, decrease the esterification of fatty acids to form glycerolipids, and, by mechanisms still unknown, increase energy expenditure. Malonyl CoA contributes to these events because it is an allosteric inhibitor of carnitine palmitoyltransferase, the enzyme that controls the transfer of long-chain fatty acyl CoA from the cytosol to the **mitochondria**, where they are oxidized. AMPK activation in turn increases fatty acid oxidation (by effects on enzymes that govern malonyl CoA synthesis and possibly its degradation) and inhibits triglyceride synthesis. It also increases the **expression** of uncoupling proteins and the transcriptional regulator peroxisome proliferator-activated receptor γ coactivator-1α (PGC1α), which could possibly increase energy expenditure. Recent studies suggest that the ability of leptin, adiponectin, 5'-aminoimidazole 4-carboxamide riboside (AICAB), adrenergic agonists, and metformin to diminish adiposity may be mediated, at least in part, by AMPK activation in peripheral tissues. In addition, preliminary studies suggest that malonyl CoA and AMPK take part in fuel-sensing and signaling mechanisms in the hypothalamus that could regulate food intake and energy expenditure.

L7 ANSWER 7 OF 39 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2003442555 EMBASE
TITLE: Molecular and functional characterization of **adenylate kinase** 2 gene from Leishmania donovani.
AUTHOR: Villa H.; Perez-Pertejo Y.; Garcia-Estrada C.; Reguera R.M.; Requena J.M.; Tekwani B.L.; Balana-Fouce R.; Ordonez D.
CORPORATE SOURCE: D. Ordonez, Dept. Farmacol. y Toxicologia, Ftad. Veterinaria, Universidad de Leon, Campus de Vegazana s/n, 24071 Leon, Spain. dftrbf@isidoro.unileon.es
SOURCE: European Journal of Biochemistry, (2003) 270/21 (4339-4347).
Refs: 29

ISSN: 0014-2956 CODEN: EJBCAI
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB ATP-regenerating enzymes may have an important role in maintaining ATP levels in **mitochondria**-like kinetoplast organelle and glycosomes in parasitic protozoa. **Adenylate kinase** (AK) (ATP:AMP phosphotransferase) catalyses the reversible transfer of the γ-phosphate group from ATP to AMP, releasing two molecules of ADP. This study describes **cloning** and functional characterization of the gene encoding AK2 from a genomic library of Leishmania donovani and also its **expression** in leishmania promastigote cultures. AK2 was localized on an ≈ 1.9-Mb chromosomal band as a single copy gene. L. donovani AK2 gene is **expressed** as a single 1.9-kb mRNA transcript that is developmentally regulated and accumulated during the early log phase. The overexpression of L. donovani AK gene in Escherichia coli yielded a 26-kDa polypeptide that could be refolded to a functional protein with AK activity. The **recombinant** protein was purified to apparent homogeneity. Kinetic analysis of purified L. donovani AK showed hyperbolic behaviour for both ATP and AMP, with Km values of 104 and 74 μM, respectively. The maximum enzyme activity (V(max)) was 0.18 μmol.ovrhdot.min(-1).ovrhdot. mg (-1) protein. P(1),P(5)-(bis adenosine)-5'- pentaphosphate (Ap(5)A), the specific inhibitor of AK, competitively inhibited activity of the **recombinant** enzymes with estimated K(i) values of 190 nM and 160 nM for ATP and AMP, respectively. Ap(5)A also inhibited the growth of L. donovani promastigotes in vitro which could be only partially reversed by the addition of ADP. Thus, presence of a highly regulated AK2, which may have role in maintenance of ADP/ATP levels in L. donovani, has been demonstrated.

L7 ANSWER 8 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:637880 HCAPLUS
DOCUMENT NUMBER: 137:179893
TITLE: Methods for identifying compounds that inhibit or reduce PTP1B (protein tyrosine phosphatase 1B) **expression**
INVENTOR(S): Zinker, Bradley A.; Trevillyan, James M.; Jirousek, Michael R.; Rondinone, Christina M.; Cowsert, Lex M.; Wyatt, Jacqueline; Monia, Brett P.; Butler, Madeline M.; Waring, Jeffrey French
PATENT ASSIGNEE(S): Abbott Laboratories, USA; Isis Pharmaceuticals, Inc.
SOURCE: PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002064840	A2	20020822	WO 2002-US4194	20020213
WO 2002064840	A3	20031224		
W: CA, JP, MX				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
US 2003108883	A1	20030612	US 2002-74194	20020212

PRIORITY APPLN. INFO.: US 2001-268399P P 20010213
US 2002-74194 A 20020212

AB The present invention relates to methods for identifying compds. that inhibit PTP1B (protein tyrosine phosphatase 1B) mRNA and protein **expression** in insulin resistant obese non-**human** mammals. The present invention relates to biol. markers for PTP1B inhibition or

reduction Specifically, the present invention relates to methods for measuring the downregulation of the p85α regulatory subunit of phosphatidylinositol-3-kinase and the upregulation of p55α and/or p50α isoforms in response to in vivo inhibition or reduction of PTP1B in insulin resistant mammals. Moreover, the present invention relates to an in vivo marker for pharmacodynamic measurements and mechanism of action detns. of small mol. drugs which inhibit or reduce PTP1B activity. Finally, the present invention also provides a method to screen agents for activity that down modulates p85α and upregulates phosphatidylinositol-3-kinase p85α isoforms as drugs for the treatment of type 2 diabetes.

L7 ANSWER 9 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:937303 HCAPLUS
DOCUMENT NUMBER: 138:20443
TITLE: Endocrine disruptor screening using DNA chips of endocrine disruptor-responsive genes
INVENTOR(S): Kondo, Akihiro; Takeda, Takeshi; Mizutani, Shigetoshi; Tsujimoto, Yoshimasa; Takashima, Ryokichi; Enoki, Yuki; Kato, Ikunoshin
PATENT ASSIGNEE(S): Takara Bio Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 386 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002355079	A2	20021210	JP 2002-69354	20020313

PRIORITY APPLN. INFO.:
JP 2001-73183 A 20010314
JP 2001-74993 A 20010315
JP 2001-102519 A 20010330

AB A method and kit for detecting endocrine-disrupting chems. using DNA microarrays are claimed. The method comprises preparing a nucleic acid sample containing mRNAs or cDNAs originating in cells, tissues, or organisms which have been brought into contact with a sample containing the endocrine disruptor. The nucleic acid sample is hybridized with DNA microarrays having genes affected by the endocrine disruptor or DNA fragments originating in these genes have been fixed. The results obtained are then compared with the results obtained with the control sample to select the gene affected by the endocrine disruptor. Genes whose **expression** is altered by tri-Bu tin, 4-octaphenol, 4-nonylphenol, di-N-Bu phthalate, dichlorohexyl phthalate, octachlorostyrene, benzophenone, diethylhexyl phthalate, diethylstilbestrol (DES), and 17-β estradiol (E2), were found in mice by DNA chip anal.

L7 ANSWER 10 OF 39 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2002449003 EMBASE
TITLE: Old and new determinants in the regulation of energy expenditure.
AUTHOR: Russell A.P.; Giacobino J.P.
CORPORATE SOURCE: Prof. J.P. Giacobino, Departement de Biochimie Medicale, Centre Medical Universitaire, 1 rue Michel-Servet, 1211 Geneve 4, Switzerland. Jean-Paul.Giacobino@medecine.unige.ch
SOURCE: Journal of Endocrinological Investigation, (2002) 25/10 (862-866).
Refs: 55
ISSN: 0391-4097 CODEN: JEIND7
COUNTRY: Italy
DOCUMENT TYPE: Journal; General Review

FILE SEGMENT: 003 Endocrinology
029 Clinical Biochemistry
005 General Pathology and Pathological Anatomy
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Bw gain is controlled by energy intake on one hand and expenditure on the other. The components of energy expenditure are basal metabolism, exercise induced thermogenesis and adaptive thermogenesis. In this short review we shall discuss the main determinants of adaptive thermogenesis.

L7 ANSWER 11 OF 39 EMBASE
on STN
ACCESSION NUMBER: 2002446521 EMBASE
TITLE: Frontiers in research on parasitic protozoa.
AUTHOR: Gibson W.; Miles M.
CORPORATE SOURCE: W. Gibson, School of Biological Sciences, University of Bristol, Woodland Road, Bristol BS8 1UG, United Kingdom. w.gibson@bristol.ac.uk
SOURCE: Trends in Parasitology, (1 Dec 2002) 18/12 (521-522).
Refs: 2
ISSN: 1471-4922 CODEN: TPRACT
PUBLISHER IDENT.: S 1471-4922(02)02416-9
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 004 Microbiology
037 Drug Literature Index
LANGUAGE: English

L7 ANSWER 12 OF 39 MEDLINE on STN
ACCESSION NUMBER: 2002123884 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11859412
TITLE: A matrix-assisted laser desorption ionization post-source decay (MALDI-PSD) analysis of proteins released from isolated liver **mitochondria** treated with **recombinant** truncated Bid.
AUTHOR: Van Loo G; Demol H; van Gurp M; Hoorelbeke B; Schotte P; Beyaert R; Zhivotovsky B; Gevaert K; Declercq W; Vandekerckhove J; Vandenabeele P
CORPORATE SOURCE: Flanders Interuniversity Institute for Biotechnology and Ghent University, Department of Molecular Biology, Unit of Molecular Signaling and Cell Death, KL Ledeganckstraat 35, B-9000 Gent, Belgium.
SOURCE: Cell death and differentiation, (2002 Mar) 9 (3) 301-8.
Journal code: 9437445. ISSN: 1350-9047.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200207
ENTRY DATE: Entered STN: 20020223
Last Updated on STN: 20020810
Entered Medline: 20020731
AB A crucial event in the process of apoptosis is caspase-dependent generation of truncated Bid (tBid), inducing release of cytochrome c. In an in vitro reconstitution system we combined purified **recombinant** tBid with isolated liver **mitochondria** and identified the released proteins using a proteomic matrix-assisted laser desorption ionization post-source decay (MALDI-PSD) approach. In order to meet physiological conditions, the concentration of tBid was chosen such that it was unable to induce cytochrome c release in **mitochondria** derived from liver-specific Bcl-2-transgenic mice. Several

mitochondrial proteins were identified to be released in a tBid-dependent way, among which cytochrome c, DIABLO/Smac, **adenylate kinase** 2, acyl-CoA-binding protein, endonuclease G, polypyrimidine tract-binding protein, a type-I RNA helicase, a WD-40 repeat-containing protein and the serine protease Omi. Western blotting confirmed the absence of **adenylate kinase** 3, a matrix **mitochondrial** protein. These results demonstrate that a physiologically relevant concentration of tBid is sufficient to induce release of particular intermembrane **mitochondrial** proteins belonging to a broad molecular-mass range.

L7 ANSWER 13 OF 39 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 2002-00258 BIOTECHDS
TITLE: New antibody against **human mitochondria adenylate-kinase** isozyme 2 or isozyme 3, for detecting the isozymes in a detection sample to diagnose cardiac diseases such as myocardial infarction and angina pectoris;
monoclonal antibody, hybridoma cell culture and detection marker useful in disease diagnosis
AUTHOR: Cho K S; Lee S M
PATENT ASSIGNEE: Kim H J
LOCATION: Ansan, Korea.
PATENT INFO: WO 2001058482 16 Aug 2001
APPLICATION INFO: WO 2000-KR882 10 Aug 2000
PRIORITY INFO: KR 2000-5808 8 Feb 2000
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2001-522438 [57]
AB An antibody (I) specific to **human mitochondria adenylate-kinase** (AK) isozymes AK2 or AK3 or their portion, is claimed. (I) is produced in an animal species and has a reactivity with the immunogen which includes a **human mitochondria adenylate-kinase** isozyme or its portion. Also claimed are: an immunological formulation (II) for diagnosing cardiac disease containing (I) and a detection marker; and a diagnostic kit (III) for cardiac disease containing a carrier and (I) which is coupled with a detection marker. (I) is useful for detecting a **human mitochondrial adenylate-kinase** isozyme (AK2) or(AK3) in a detection sample. An immunological formulation (II) for diagnosing cardiac disease containing (I) and a detection marker is useful for detecting **adenylate-kinase** isozyme in a biological sample. (I) is useful for diagnosing cardiac disease such as myocardial infarction, angina pectoris. (II) and a diagnostic kit (III) are also useful for diagnosing cardiac disease. (56pp)

L7 ANSWER 14 OF 39 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2001439872 MEDLINE
DOCUMENT NUMBER: 21378190 PubMed ID: 11485571
TITLE: Structure and **expression** of **human mitochondrial adenylate kinase** targeted to the **mitochondrial** matrix.
AUTHOR: Noma T; Fujisawa K; Yamashiro Y; Shinohara M; Nakazawa A; Gondo T; Ishihara T; Yoshinobu K
CORPORATE SOURCE: Department of Biochemistry, Yamaguchi University School of Medicine, 1-1-1 Minami-Kogushi, Ube, Yamaguchi 755-8505, Japan.. tnoma@po.cc.yamaguchi-u.ac.jp
SOURCE: BIOCHEMICAL JOURNAL, (2001 Aug 15) 358 (Pt 1) 225-32. Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

OTHER SOURCE: GENBANK-AB021870
ENTRY MONTH: 200109
ENTRY DATE: Entered STN: 20010924
Last Updated on STN: 20010924
Entered Medline: 20010920

AB The previously isolated cDNA encoding **human adenylate kinase** (AK) isozyme 3 was recently renamed AK4. Consequently, **human** AK3 cDNA remains to be identified and we have little information about the functional relationship between **human** AK3 and AK4. In pursuit of the physiological roles of both the AK3 and AK4 proteins, we first isolated an authentic **human** AK3 cDNA and compared their **expression**. Nucleotide sequencing revealed that the cDNA encoded a 227-amino-acid protein, with a deduced molecular mass of 25.6 kDa, that shares greater homology with the AK3 cDNAs isolated from bovine and rat than that from **human**. We named the isolated cDNA AK3. Northern-blot analysis revealed that AK3 mRNA was present in all tissues examined, and was highly **expressed** in heart, skeletal muscle and liver, moderately **expressed** in pancreas and kidney, and weakly **expressed** in placenta, brain and lung. On the other hand, we found that **human** AK4 mRNA was highly **expressed** in kidney, moderately **expressed** in heart and liver and weakly **expressed** in brain. Western-blot analysis demonstrated **expression** profiles of AK3 and AK4 that were similar to their mRNA **expression** patterns in each tissue. Over **expression** of AK3, but not AK4, in both Escherichia coli CV2, a temperature-sensitive AK mutant, and a **human** embryonic kidney-derived cell line, HEK-293, not only produced significant GTP:AMP phosphotransferase (AK3) activity, but also complemented the CV2 cells at 42 degrees C. Subcellular and submitochondrial fractionation analysis demonstrated that both AK3 and AK4 are localized in the **mitochondrial** matrix.

L7 ANSWER 15 OF 39 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2002:288316 BIOSIS
DOCUMENT NUMBER: PREV200200288316
TITLE: Hemodynamic unloading by ventricular assist devices has no beneficial effect for the inflammation-associated apoptotic pathway in **human** terminally failing myocardium.
AUTHOR(S): Scheubel, Robert Johannes [Reprint author]; Bartling, Babett [Reprint author]; Stein, Susanne; Darmer, Dorothea; Holtz, Juergen; Silber, Rolf-Edgar
CORPORATE SOURCE: Clin fuer Herz- und Thoraxchirurgie, Halle/Saale, Germany
SOURCE: Circulation, (October 23, 2001) Vol. 104, No. 17 Supplement, pp. II.713. print.
Meeting Info.: Scientific Sessions 2001 of the American Heart Association. Anaheim, California, USA. November 11-14, 2001. American Heart Association.
CODEN: CIRCAZ. ISSN: 0009-7322.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 15 May 2002
Last Updated on STN: 15 May 2002

L7 ANSWER 16 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:810680 HCAPLUS
DOCUMENT NUMBER: 133:345587
TITLE: Protein and cDNA sequences of a novel **human Mitochondria adenylate kinase** GTP3P and uses thereof
INVENTOR(S): Yu, Long; Zhao, Yong; Bi, Anding; Gao, Jie; Zhao, Shouyuan
PATENT ASSIGNEE(S): Fudan Gene Engineering Co., Ltd., Xinhuangpu, Shanghai, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 20 pp.

CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1249340	A	20000405	CN 1998-119439	19980928

PRIORITY APPLN. INFO.: CN 1998-119439 19980928

AB The invention provides protein and cDNA sequences of a novel **human Mitochondria adenylate kinase** GTP3P which is belived to be a GTP-AMP transphosphorylase. The invention also relates to constructing **adenylate kinase** GTP3P **expression** cassette to producing **recombinant adenylate kinase** GTP3P using E.coli cells or eukaryotic cells. The invention further relates to the uses of **adenylate kinase** GTP3P.

L7 ANSWER 17 OF 39 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2000:361124 SCISEARCH
THE GENUINE ARTICLE: 311BC
TITLE: Cellular phosphorylation of 2',3'-dideoxyadenosine-5'-monophosphate, a key intermediate in the activation of the antiviral agent DDI, in huhlan peripheral blood mononuclear cells
AUTHOR: Robbins B L (Reprint); Greenshaw J; Fridland A
CORPORATE SOURCE: ST JUDE CHILDRENS HOSP, DEPT INFECT DIS, 332 N LAUDERDALE ST, MEMPHIS, TN 38105 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: NUCLEOSIDES NUCLEOTIDES & NUCLEIC ACIDS, (MAY 2000) Vol. 19, No. 1-2, pp. 405-413.
Publisher: MARCEL DEKKER INC, 270 MADISON AVE, NEW YORK, NY 10016.
ISSN: 1525-7770.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 20

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB 2',3'-dideoxyadenosine 5-monophosphate (ddAMP), is a key intermediate in the metabolism of the antiviral agent 2',3'-dideoxyinosine (ddI) to its active triphosphate derivative, 2',3'-dideoxyadenosine-5'-triphosphate (ddATP). The potential role of **adenylate kinase** in the phosphorylation of ddAMP was studied in **human** peripheral blood mononuclear cells (PBMC) and a **human** T cell line, CEMss. Subcellular distribution, sulfhydryl inhibitor, and substrate specificity studies support the hypothesis that the **mitochondrial adenylate kinase** (AK2) is a major route of cellular activation of these compounds in **human** lymphocytes.

L7 ANSWER 18 OF 39 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2000246295 MEDLINE
DOCUMENT NUMBER: 20246295 PubMed ID: 10786623
TITLE: cDNA **cloning** and chromosomal mapping of the gene encoding **adenylate kinase** 2 from Drosophila melanogaster.
AUTHOR: Noma T; Murakami R; Yamashiro Y; Fujisawa K; Inouye S; Nakazawa A
CORPORATE SOURCE: Department of Biochemistry, Yamaguchi University School of Medicine, Ube, Japan.. tnoma@po.cc.yamaguchi-u.ac.jp
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA, (2000 Jan 31) 1490 (1-2) 109-14.
Journal code: 0217513. ISSN: 0006-3002.

PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AB009996; GENBANK-AC004642
ENTRY MONTH: 200005
ENTRY DATE: Entered STN: 20000606
Last Updated on STN: 20000606
Entered Medline: 20000524

AB As a step toward understanding of the role of **adenylate kinase** (AK) in energy metabolism, we analyzed this enzyme in Drosophila melanogaster. The enzyme activities of all three AK isozymes were determined in cell-free extracts of flies, and their proteins were detected by Western blot analysis using polyclonal antibodies against the mammalian isozymes. A cDNA encoding **adenylate kinase** was isolated from D. melanogaster cDNA library. The cDNA encodes a 240-amino acid protein, which shows high similarity to bovine, **human** and rat AK2, and hence was named DAK2. Preliminary subcellular fractionation analysis indicated that DAK2 is localized in both cytoplasm and **mitochondria**. In situ hybridization to salivary gland polytene chromosomes revealed that the Dak2 gene is located at 60B on the right arm of the second chromosome.

L7 ANSWER 19 OF 39 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2000:126507 SCISEARCH
THE GENUINE ARTICLE: 282KY
TITLE: cDNA **cloning** and chromosomal mapping of the gene encoding **adenylate kinase** 2 from Drosophila melanogaster
AUTHOR: Noma T (Reprint); Murakami R; Yamashiro Y; Fujisawa K; Inouye S; Nakazawa A
CORPORATE SOURCE: YAMAGUCHI UNIV, SCH MED, DEPT BIOCHEM, YAMAGUCHI 7558505, JAPAN (Reprint); YAMAGUCHI UNIV, FAC SCI, DEPT PHYS BIOL & INFORMAT, YAMAGUCHI 7538512, JAPAN
COUNTRY OF AUTHOR: JAPAN
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA-GENE STRUCTURE AND EXPRESSION, (31 JAN 2000) Vol. 1490, No. 1-2, pp. 109-114. Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0167-4781.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 32
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB As a step toward understanding of the role of **adenylate kinase** (AK) in energy metabolism, we analyzed this enzyme in Drosophila melanogaster. The enzyme activities of all three AK isozymes were determined in cell-free extracts of flies, and their proteins were detected by Western blot analysis using polyclonal antibodies against the mammalian isozymes. A cDNA encoding **adenylate kinase** was isolated from D, melanogaster cDNA library. The cDNA encodes a 240-amino acid protein, which shows high similarity to bovine, **human** and rat AK2, and hence was named DAK2. Preliminary subcellular fractionation analysis indicated that DAK2 is localized in both cytoplasm and **mitochondria**. In situ hybridization to salivary gland polytene chromosomes revealed that the Dak2 gene is located at 60B on the right arm of the second chromosome.

L7 ANSWER 20 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:782966 HCAPLUS
DOCUMENT NUMBER: 136:322434
TITLE: **Expression** of mRNAs encoding

adenylate kinase isozymes 1, 2, 3, and 4 in mouse tissues and during neuronal differentiation of P19 embryonal carcinoma cells

AUTHOR(S): Yamashiro, Yasuhiro

CORPORATE SOURCE: Department of Biochemistry, Yamaguchi University School of Medicine, Yamaguchi, 755-8505, Japan

SOURCE: Bulletin of the Yamaguchi Medical School (2000), 47(3-4), 55-68
CODEN: BYMSAN; ISSN: 0513-1812

PUBLISHER: Yamaguchi University, School of Medicine

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors **cloned** cDNAs encoding four **adenylate kinase** (AK) isoenzymes from a mouse kidney cDNA library. The AK1, AK2, AK3, and AK4 cDNAs encode the 194-, 232-, 227-, and 223-amino acid proteins, resp. AK4 is a recently isolated gene that is highly homologous to the reported **human** AK3. Northern blot anal. and reverse transcription-polymerase chain reaction anal. revealed that AK1 mRNA was predominantly **expressed** in skeletal muscle, heart, and testis; AK2 mRNA in liver, heart, kidney, and testis; AK3 mRNA almost uniformly in all tissues examined; and AK4 mRNA prominently in kidney. Subcellular and submitochondrial fractionation anal. suggested that AK4 was localized in the **mitochondrial** matrix. Further, the authors found a 76-fold induction of AK1 mRNA **expression** concomitant with a 53-fold induction of NeuroD **expression** during retinoic acid-induced neuronal differentiation of P19 embryonic carcinoma cell. AK2 and AK3 mRNA **expression** was increased by 4- to 6-fold during differentiation, whereas AK4 transcription was first down-regulated and subsequently returned to the original level. These data on AK isoenzyme gene **expression** may provide basic information for production and evaluation of transgenic mice as well as knockout mice to further understand the physiol. role of AK isoenzymes.

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 21 OF 39 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2000:290852 BIOSIS

DOCUMENT NUMBER: PREV200000290852

TITLE: **Mitochondrial adenylate kinase**

AUTHOR(S): Hillman, Jennifer L. [Inventor]; Shah, Purvi [Inventor]

CORPORATE SOURCE: ASSIGNEE: Incyte Pharmaceuticals, Inc.

PATENT INFORMATION: US 6001624 December 14, 1999

SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Dec. 14, 1999) Vol. 1229, No. 2. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.

DOCUMENT TYPE: Patent

LANGUAGE: English

ENTRY DATE: Entered STN: 6 Jul 2000
Last Updated on STN: 7 Jan 2002

AB The present invention provides a **human mitochondrial adenylate kinase** (HMAK) and polynucleotides which encode HMAK. The invention also provides **expression** vectors, host cells, agonists, antisense molecules, antibodies, or antagonists. The invention also provides methods for treating disorders associated with **expression** of HMAK.

L7 ANSWER 22 OF 39 MEDLINE on STN DUPLICATE 4

ACCESSION NUMBER: 1999221639 MEDLINE

DOCUMENT NUMBER: PubMed ID: 10205158

TITLE: Presence of a pre-apoptotic complex of pro-caspase-3, Hsp60 and Hsp10 in the **mitochondrial** fraction of jurkat cells.

AUTHOR: Samali A; Cai J; Zhivotovsky B; Jones D P; Orrenius S

CORPORATE SOURCE: Institute of Environmental Medicine, Division of Toxicology, Karolinska Institutet, Box 210, S-171 77, Stockholm, Sweden.. afshin.samali@imm.ki.se
CONTRACT NUMBER: ES09047 (NIEHS)
SOURCE: EMBO journal, (1999 Apr 15) 18 (8) 2040-8. Journal code: 8208664. ISSN: 0261-4189.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199906
ENTRY DATE: Entered STN: 19990628
Last Updated on STN: 19990628
Entered Medline: 19990611

AB Activation of pro-caspase-3 is a central event in the execution phase of apoptosis and appears to serve as the convergence point of different apoptotic signaling pathways. Recently, **mitochondria** were found to play a central role in apoptosis through release of cytochrome c and activation of caspases. Moreover, a sub-population of pro-caspase-3 has been found to be localized to this organelle. In the present study, we demonstrate that pro-caspase-3 is present in the **mitochondrial** fraction of Jurkat T cells in a complex with the chaperone proteins Hsp60 and Hsp10. Induction of apoptosis with staurosporine led to the activation of **mitochondrial** pro-caspase-3 and its dissociation from the Hsps which were released from **mitochondria**. The release of Hsps occurred simultaneously with the release of other **mitochondrial** intermembrane space proteins including cytochrome c and **adenylate kinase**, prior to a loss of **mitochondrial** transmembrane potential. In in vitro systems, **recombinant** Hsp60 and Hsp10 accelerated the activation of pro-caspase-3 by cytochrome c and dATP in an ATP-dependent manner, consistent with their function as chaperones. This finding suggests that the release of **mitochondrial** Hsps may also accelerate caspase activation in the cytoplasm of intact cells.

L7 ANSWER 23 OF 39 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1999-00127 BIOTECHDS
TITLE: **Human mitochondrial adenylate-kinase**, HMAK;
sense, antisense sequence, antibody, agonist and antagonist used for cancer, neurological and immunological disorder diagnosis and therapy
AUTHOR: Hillman J L; Shah P
PATENT ASSIGNEE: Incyte-Pharm.
LOCATION: Palo Alto, CA, USA.
PATENT INFO: WO 9844124 8 Oct 1998
APPLICATION INFO: WO 1998-US6249 30 Mar 1998
PRIORITY INFO: US 1997-829027 31 Mar 1997
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1998-557119 [47]

AB A purified **mitochondrial adenylate-kinase** (EC-2.7.4.3) with a given protein sequence is claimed. Also claimed is a nucleic acid encoding the kinase, of given nucleotide sequence, and that hybridizes, under stringent conditions, with the given nucleic acid sequence. The claims also cover a nucleic acid complementary to the given sequence, and a DNA probe that constitutes part of that complementary sequence. Also covered are an **expression** vector containing the given nucleic acid sequence, a host cell transformed by that vector, and a means of preparing the **adenylate-kinase** by culturing the transformed cell, and recovering the protein. The claims extend to a composition containing the **adenylate-kinase**, and an antibody, agonist and antagonist of the protein. These are used to treat neurological

disorders, cancer and immunological disorders. Also claimed is a means of detecting nucleic acids encoding **mitochondrial adenylate-kinase** in a sample using the DNA probe, and detecting the hybridization complex. The nucleic acids can also be administered for gene therapy. (63pp)

L7 ANSWER 24 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:324881 HCAPLUS
DOCUMENT NUMBER: 129:39786
TITLE: Diabetes-mediating proteins and their therapeutic uses
INVENTOR(S): Mose, Larsen Peter; Fey, Stephen J.; Nerup, Jorn; Karlsen, Allan E.; Bjerre, Christensen Ulla; Pociot, Flemming; Andersen, Henrik U.
PATENT ASSIGNEE(S): Mose Larsen, Peter, Den.; Fey, Stephen J.; Nerup, Jorn; Karlsen, Allan E.; Bjerre Christensen, Ulla; Pociot, Flemming; Andersen, Henrik U.
SOURCE: PCT Int. Appl., 145 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9820124	A2	19980514	WO 1997-IB1627	19971024
WO 9820124	A3	19981008		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
WO 9811508	A1	19980319	WO 1997-IB1114	19970916
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC				
JP 2001500614	T2	20010116	JP 1998-513441	19970916
AU 9854070	A1	19980529	AU 1998-54070	19971024
EP 934409	A2	19990811	EP 1997-947839	19971024
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001503860	T2	20010321	JP 1998-520234	19971024
JP 2002504806	T2	20020212	JP 1998-521182	19971024
KR 2000052802	A	20000825	KR 1999-703621	19990424
US 6611766	B1	20030826	US 1999-297034	19990621
US 6640000	B1	20031028	US 1999-254675	19990621

PRIORITY APPLN. INFO.:		
US 1996-29324P	P	19961025
US 1996-30088P	P	19961105
US 1996-30186P	P	19961105
US 1997-897098	A2	19970718
US 1996-31291P	P	19960916
US 1996-29325P	P	19961025
WO 1997-IB1114	W	19970916
WO 1997-IB1337	W	19971024
WO 1997-IB1627	W	19971024

AB Protective and deleterious diabetes-mediating proteins involved in the development of diabetes or in the prevention of diabetes development are

identified by differential **expression** during during development of diabetes relative to **expression** in the absence of diabetes development. These proteins are referred to by their position on 10% IEF or NEPHGE 2-dimensional gels. The purified diabetes-mediating proteins are characterized by mol. weight, isoelec. point, and mass spectroscopic characteristics. Galectin-3 (rat and **human**) and mortalin (mouse and **human**), two of the identified proteins from pancreatic islets, were also sequenced. Transgenic animals **expressing** a diabetes-mediating protein, drug screening methods for identifying a test compound capable of altering the **expression** of a diabetes-mediating protein, and methods of preventing or ameliorating diabetes by administering a compound capable of altering the **expression** of a diabetes-mediating protein are also provided..

L7 ANSWER 25 OF 39 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 1999033072 MEDLINE
DOCUMENT NUMBER: 99033072 PubMed ID: 9813319
TITLE: Identification of a novel **adenylate kinase** system in the brain: **cloning** of the fourth **adenylate kinase**.
AUTHOR: Yoneda T; Sato M; Maeda M; Takagi H
CORPORATE SOURCE: First Department of Anatomy, Osaka City University Medical School, 1-4-3 Asahimachi, Abeno-ku, Osaka-shi, Osaka 545-8585, Japan.
SOURCE: BRAIN RESEARCH. MOLECULAR BRAIN RESEARCH, (1998 Nov 20) 62 (2) 187-95.
Journal code: 8908640. ISSN: 0169-328X.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-D85036; GENBANK-D87809
ENTRY MONTH: 199902
ENTRY DATE: Entered STN: 19990301
Last Updated on STN: 20000303
Entered Medline: 19990218

AB We identify a novel subtype of **adenylate kinase**, which is the 4th **adenylate kinase** (AK4), in the vertebrate. AK4 mRNA is **expressed** in the mammalian central nervous system in a region-specific manner from the middle stage of embryogenesis to the adulthood in the rodent. The presence of three isozymes of **adenylate kinase** (AK1, AK2 and AK3) that maintains the homeostasis of adenine and guanine nucleotide composition has been reported in the vertebrate. Obtained mouse AK4 cDNA is 3667 bp in size. The predicted open reading frame consists of 223 amino acid residues. Rat AK4 cDNA is also obtained, and the predicted open reading frame is the same length as that of the mouse. The predicted rat AK4 molecule shows 97.8% homology with mouse AK4. Rat AK4 protein is distinct from rat AK3, 53.8% homologous with rat AK3, although the **adenylate kinase** signature and the **mitochondrial** energy transfer protein signature are found in both sequences. Interestingly, rat AK4 is 89.2% homologous with the **human** AK3 over 223 amino acid residues and rat AK3 is 53.7% homologous with the **human** AK3 indicating that the reported **human** AK3 actually belongs to the AK4 group (therefore, it should be referred to as **human** AK4). Although the sequence of AK4 is most similar to that of AK3 among the AK isozymes, its in vivo **expression** is completely different from AK3; AK4 mRNA is **expressed** in the pyramidal cells in the hippocampus (mainly in the subfield CA3), the granular cells in the cerebellum, nasal neuroepithelium and the liver while AK3 mRNA is **expressed** ubiquitously in the body. It is probable that AK4 acts on the specific mechanism of energy metabolism rather than control of the homeostasis of the ADP pool ubiquitously.

L7 ANSWER 26 OF 39 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 97300699 EMBASE
DOCUMENT NUMBER: 1997300699
TITLE: p32 protein, a splicing factor 2-associated protein, is localized in **mitochondrial** matrix and is functionally important in maintaining oxidative phosphorylation.
AUTHOR: Muta T.; Kang D.; Kitajima S.; Fujiwara T.; Hamasaki N.
CORPORATE SOURCE: D. Kang, Dept. of Clinical Chem./Lab. Med., Kyushu University Fac. of Medicine, 3-1-1 Maidashi, Higashi-ku, Fukuoka 812-82, Japan
SOURCE: Journal of Biological Chemistry, (1997) 272/39 (24363-24370).
Refs: 44
ISSN: 0021-9258 CODEN: JBCHA3
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB **Human** p32, originally **cloned** as a splicing factor 2-associated protein, has been reported to interact with a variety of molecules including **human** immunodeficiency virus Tat and complement 1q (C1q). p32 protein is supposed to be in the nucleus and on the plasma membrane for the association with **human** immunodeficiency virus Tat and C1q, respectively. None of the interactions, however, is proven to have a physiological role. To investigate the physiological function of p32, we determined the intracellular localization of p32. The fractionation of cells, fluorescent immunocytochemistry, and electron microscopic immunostaining show that p32 is exclusively localized in the **mitochondrial** matrix. We **cloned** a Saccharomyces cerevisiae homologue of **human** p32 gene, referred to yeast p30 gene. The yeast p30 protein is also localized in the **mitochondrial** matrix. The disruption of the p30 gene caused the growth retardation of yeast cells in a glycerol medium but not in a glucose medium, i.e. the impairment of the **mitochondrial** ATP synthesis. The growth impairment was restored by the introduction of the **human** p32 cDNA, indicating that p30 is a functional yeast counterpart of **human** p32. Taken together, both p32 and p30 reside in **mitochondrial** matrix and play an important role in maintaining **mitochondrial** oxidative phosphorylation.

L7 ANSWER 27 OF 39 MEDLINE on STN DUPLICATE 7

ACCESSION NUMBER: 1998088919 MEDLINE
DOCUMENT NUMBER: 98088919 PubMed ID: 9428643
TITLE: Intrinsic nucleoside diphosphate kinase-like activity as a novel function of 14-3-3 proteins.
AUTHOR: Yano M; Mori S; Niwa Y; Inoue M; Kido H
CORPORATE SOURCE: Division of Enzyme Chemistry, Institute for Enzyme Research, The University of Tokushima, Japan.
SOURCE: FEBS LETTERS, (1997 Dec 15) 419 (2-3) 244-8.
Journal code: 0155157. ISSN: 0014-5793.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199801
ENTRY DATE: Entered STN: 19980206
Last Updated on STN: 19980206
Entered Medline: 19980127

AB 14-3-3 proteins play a role in many cellular functions as molecular chaperone and adapter proteins: they bind to and modulate several proteins

involved in cell proliferation and differentiation, and also function ATP-dependently in targeting of precursors to **mitochondria**. We show here that 14-3-3 purified from a **human** lymphoblastoma and also its **recombinant** tau isoform exhibited intrinsic nucleoside diphosphate (NDP) kinase-like activity. 14-3-3 proteins preferentially catalyzed the transfer of the gamma-phosphate group from ATP, dATP or dGTP to all nucleoside diphosphates and this transfer involved acid-labile phosphoenzyme intermediates. They also simultaneously catalyzed the reverse reaction of ATP hydrolysis. These properties of 14-3-3 are similar to those of NDP kinase, but not to those of **adenylate kinase**.

L7 ANSWER 28 OF 39 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 95:187668 SCISEARCH
THE GENUINE ARTICLE: QK489
TITLE: CONTROL OF CELLULAR RESPIRATION IN-VIVO BY **MITOCHONDRIAL** OUTER-MEMBRANE AND BY CREATINE-KINASE - A NEW SPECULATIVE HYPOTHESIS - POSSIBLE INVOLVEMENT OF **MITOCHONDRIAL**-CYTOSKELETON INTERACTIONS
AUTHOR: SAKS V A (Reprint); KUZNETSOV A V; KHUCHUA Z A; VASILYEVA E V; BELIKOVA J O; KESVATERA T; TIIVEL T
CORPORATE SOURCE: UNIV GRENOBLE 1, PHYSIOL CELLULAIRE CARDIAQUE LAB, BP 53X, F-38041 GRENOBLE, FRANCE (Reprint); INST CHEM & BIOL PHYS, BIOENERGET LAB, TALLINN, ESTONIA; CARDIOL RES CTR, BIOENERGET GRP, MOSCOW 121552, RUSSIA
COUNTRY OF AUTHOR: FRANCE; ESTONIA; RUSSIA
SOURCE: JOURNAL OF MOLECULAR AND CELLULAR CARDIOLOGY, (JAN 1995) Vol. 27, No. 1, pp. 625-645.
ISSN: 0022-2828.
DOCUMENT TYPE: General Review; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 119

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The current problems of regulation of myocardial energy metabolism and oxidative phosphorylation in vivo are considered, With this purpose, retarded diffusion of ADP in cardiomyocytes was studied by analysis of elevated apparent K-m for this substrate in regulation of respiration of saponin-skinned cardiac fibers, as compared to isolated **mitochondria**. Recently published data showing the importance of the outer **mitochondrial** membrane were compared with new experimental results on the proteolysis of skinned fibers and tissue homogenates. In both cases 10 min incubation and 0.125 mg/ml of trypsin resulted in a decrease of apparent K-m for ADP from 297 +/- 35 and 228 +/- 16 to 109 +/- 2 and 36 +/- 16, respectively. Thus, the permeability of the outer **mitochondrial** membrane for ADP may be controlled by some unknown cytoplasmic protein(s), probably related to the cytoskelton, which are separated from **mitochondria** during their isolation. The extent of **expression** of this protein(s) depends on the energy state and type of muscle. Activation of **mitochondrial** creatine kinase reaction coupled to oxidative phosphorylation overcomes the diffusion difficulties of ADP by amplifying the stimulatory effect of ADP on respiration. It is concluded that both cytoplasmic and **mitochondrial** creatine **kinases**, **adenylate kinase** and cytoplasmic factor controlling outer membrane permeability may participate in metabolic feedback regulation of respiration in muscle cells.

L7 ANSWER 29 OF 39 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1995:481319 BIOSIS
DOCUMENT NUMBER: PREV199598495619
TITLE: Transfection of a myc gene as a means of generating infinite life span **human** fibroblast strains.

AUTHOR(S): McCormick, J. Justin [Reprint author]; Kohler, Suzanne K.; Maher, Veronica M.
CORPORATE SOURCE: Carcinogenesis Lab., Fee Hall, Mich. State Univ., East Lansing, MI 48824-1316, USA
SOURCE: Methods in Cell Science, (1995) Vol. 17, No. 2, pp. 141-148.
ISSN: 1381-5741.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 9 Nov 1995
Last Updated on STN: 14 Dec 1995

AB **Human** fibroblasts in culture have never been found to transform spontaneously into immortal cells. In an effort to generate an infinite life span cell strain from foreskin-derived normal diploid fibroblasts, we transfected the cells with a plasmid carrying a v-myc oncogene linked to the neo gene, or with a control vector carrying the neo gene, and selected drug-resistant **clones**. A **clone** that **expressed** the v-myc protein was propagated to the end of its life span, with periodic cryogenic storage of the progeny. The population went into crisis at the same time as cells from the control population and eventually senesced. However, while the cells were senescing, viable-appearing **clones** were noted. The cells of these **clones** continued to multiply, very slowly at first but eventually at a faster rate. Analysis showed that these cells have a diploid karyotype that has remained stable throughout more than 200 population doublings since their sibling cells senesced. Molecular analysis showed that the infinite life span cells are, indeed, derived from the cells used for transfection, and that they continue to **express** the v-myc protein.

L7 ANSWER 30 OF 39 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 94:686537 SCISEARCH
THE GENUINE ARTICLE: PN491
TITLE: PRIMARY AMINO-ACID-SEQUENCE AND STRUCTURE OF **HUMAN** PYRUVATE-CARBOXYLASE
AUTHOR: WEXLER I D (Reprint); DU Y F; LISGARIS M V; MANDAL S K; FREYTAG S O; YANG B S; LIU T C; KWON M; PATEL M S; KERR D S
CORPORATE SOURCE: CASE WESTERN RESERVE UNIV, RAINBOW BABIES & CHILDRENS HOSP, SCH MED, DEPT BIOCHEM, 2047 ABINGTON RD, CLEVELAND, OH, 44106 (Reprint); CASE WESTERN RESERVE UNIV, UNIV HOSP CLEVELAND, SCH MED, DEPT PEDIAT, CLEVELAND, OH, 44106; HENRY FORD HOSP, MOLEC BIOL RES PROGRAM, DETROIT, MI, 48202
COUNTRY OF AUTHOR: USA
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR BASIS OF DISEASE, (21 OCT 1994) Vol. 1227, No. 1-2, pp. 46-52.
ISSN: 0925-4439.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 43
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Pyruvate carboxylase (PC) (pyruvate:carbon dioxide ligase (ADP-forming), EC 6.4.1.1.), a nuclear-encoded **mitochondrial** enzyme, catalyzes the conversion of pyruvate to oxaloacetate. We have isolated and characterized cDNAs spanning the entire coding region of **human** PC. The sequence of **human** PC has an open reading frame of 3537 nucleotides which encodes for a polypeptide with a length of 1178 amino acids. The identity of the cDNA as PC is confirmed by comparison to PC cDNAs of other species and sequenced peptide fragments of mammalian PC. The M(r) of the full length precursor protein is 129 576 and that of the mature apoprotein is 127 370. RNA blot analysis from a variety of **human** tissues demonstrates that the highest level of PC mRNA

is found in liver corresponding to this tissue's high level of PC activity. Based on homology with other biotin-containing proteins, the ATP, pyruvate, and biotin-binding sites can be identified. One of two patients with documented PC deficiency was found to be missing PC mRNA, further confirming the identity of this cDNA.

L7 ANSWER 31 OF 39 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 92:709675 SCISEARCH
THE GENUINE ARTICLE: KB012
TITLE: VIRAL THYMIDINE KINASES AND THEIR RELATIVES
AUTHOR: GENTRY G A (Reprint)
CORPORATE SOURCE: UNIV MISSISSIPPI, MED CTR, DEPT MICROBIOL, JACKSON, MS, 39216 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: PHARMACOLOGY & THERAPEUTICS, (1992) Vol. 54, No. 3, pp. 319-355.
ISSN: 0163-7258.
DOCUMENT TYPE: General Review; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 200
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Thymidine kinases were described for cellular life long before it was shown that they could also be encoded by viruses, but the viral thymidine kinase genes were the first to be sequenced. These enzymes have been extraordinarily useful to the researcher, serving first to help label DNA, then to get thymidine analogs incorporated into DNA for therapeutic and other purposes and more recently to move genes from one genome to another. Knowledge of the nucleotide and amino acid sequences of these enzymes has allowed some deductions about their possible three-dimensional structure, as well as the location on the polypeptide of various functions; it has also allowed their classification into two main groups: the herpesviral thymidine/eukaryotic deoxycytidine kinases and the poxviral and cellular thymidine kinases; the relationships of the **mitochondrial** enzyme are still not clear.

L7 ANSWER 32 OF 39 MEDLINE on STN
ACCESSION NUMBER: 90363911 MEDLINE
DOCUMENT NUMBER: 90363911 PubMed ID: 2168054
TITLE: Gene structures of three vertebrate **adenylate kinase** isozymes.
AUTHOR: Nakazawa A; Yamada M; Tanaka H; Shahjahan M; Tanabe T
CORPORATE SOURCE: Department of Biochemistry, Yamaguchi University School of Medicine, Japan.
SOURCE: PROGRESS IN CLINICAL AND BIOLOGICAL RESEARCH, (1990) 344 495-514.
Journal code: 7605701. ISSN: 0361-7742.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199010
ENTRY DATE: Entered STN: 19901109
Last Updated on STN: 19901109
Entered Medline: 19901003

AB **Adenylate kinase** is an ubiquitous enzyme which contributes to homeostasis of adenine nucleotide composition in the cell. In vertebrates, three isozymes (AK1, AK2, and AK3) are characterized which have distinct distribution in tissues as well as subcellular compartments. The genetic backgrounds of these **adenylate kinase** isozymes were analyzed. cDNA **clones** for AK1 were isolated from poly(A)+RNA of chicken skeletal muscle. The results of mRNA analysis in various tissues using the AK1 cDNA indicated that the AK1 gene **expression** is regulated both tissue-specifically and

developmentally at the transcriptional level. The AK1 gene was **cloned** from chicken and **human** DNA and characterized. Both genes were split into seven exons. The intron positions in both genes coincided. cDNA **clones** for AK2 isolated from bovine liver poly(A)+RNA contained two types. One type (AK2A) encoded the same amino acid sequence as that reported for bovine heart AK2. The other type (AK2B) encoded the same sequence as AK2 except for the COOH terminus. The mRNA species corresponding to the two cDNA **clones** were identified in bovine liver and heart. Both the cDNA sequences were found to direct the active **adenylate kinase** synthesis in E. coli. The AK2 gene was **cloned** and characterized. It consisted of seven exons and six introns. From genomic structure analysis, the two cDNA species were shown to be derived from a single gene by the alternative splicing mechanism. Three types of cDNA **clones** for AK3 were isolated from bovine liver poly(A)+RNA, which contained the common AK3-coding region and different 3' portions. No NH2-terminal presequence of **mitochondrial** targeting was identified in AK3 from the sequencing and **expression** analyses of the cDNA. Upon **expression** of the cDNA sequence in E. coli, AK3 protein was recovered in the periplasmic space of the bacteria, indicating that AK3 without presequence was exported through the inner bacterial membrane as it is imported through the **mitochondrial** membranes. Internal targeting signals may be responsible for the translocation process. The AK3 gene was **cloned** and partially characterized. It is split into at least five exons. The comparisons of amino acid sequences and genomic structure of three isozymes revealed that a segment corresponding to either exon 5 of the AK2 gene or a part of exon 3 of the AK3 gene is missing in the AK1 gene. Phylogenetic analysis suggested that AK1, a shorter molecule, would have been separated from a longer molecule very early in evolution of **adenylate kinase**.(ABSTRACT TRUNCATED AT 400 WORDS)

L7 ANSWER 33 OF 39 MEDLINE on STN

ACCESSION NUMBER: 90037053 MEDLINE
DOCUMENT NUMBER: 90037053 PubMed ID: 2478555
TITLE: **Cloning** and characterization of cDNA for **mitochondrial** GTP:AMP phosphotransferase of bovine liver.
AUTHOR: Yamada M; Shahjahan M; Tanabe T; Kishi F; Nakazawa A
CORPORATE SOURCE: Department of Biochemistry, Yamaguchi University School of Medicine, Japan.
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1989 Nov 15) 264 (32) 19192-9.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-M25757
ENTRY MONTH: 198912
ENTRY DATE: Entered STN: 19900328
Last Updated on STN: 19960129
Entered Medline: 19891215

AB Three different types of cDNA **clones** for **mitochondrial** GTP:AMP phosphotransferase (AK3) were isolated from a cDNA library of bovine liver poly(A)+ RNA. Nucleotide sequencing revealed that each of these **clones** consisted of a common 5'-untranslated region, a common AK3-coding sequence and a 3'-untranslated region with different sizes. By Northern blot analysis, three species of AK3 mRNA apparently corresponding to the isolated cDNA **clones** were detected, which would be a result of varying terminations and polyadenylations of the primary transcript. From comparison of the size of the product synthesized in vitro from the message directed by the isolated cDNA with that of the purified AK3 protein, AK3 appeared to have no cleavable

NH2-terminal sequence as found in other **mitochondrial** proteins. The AK3 cDNA was **expressed** in Escherichia coli, which resulted in complementation of an **adenylate kinase** mutation of E. coli. The AK3 product was exported to the periplasmic space through the bacterial inner membrane. The possible involvement of the NH2-terminal sequence of the protein in targeting to the **mitochondrial** matrix was discussed.

L7 ANSWER 34 OF 39 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN DUPLICATE 8

ACCESSION NUMBER: 83053333 EMBASE
DOCUMENT NUMBER: 1983053333
TITLE: Adenosine triphosphate-adenosine-5'-monophosphate phosphotransferase from normal **human** liver **mitochondria**. Isolation, chemical properties, and immunochemical comparison with Duchenne dystrophic serum aberrant **adenylate kinase**.
AUTHOR: Hamada M.; Sumida M.; Okuda H.; et al.
CORPORATE SOURCE: Dep. Hyg., Ehime Univ. Sch. Med., Shigenobu cho, Onsen gun, Ehime 791-02, Japan
SOURCE: Journal of Biological Chemistry, (1982) 257/21 (13120-13128).
CODEN: JBCHA3
COUNTRY: United States
DOCUMENT TYPE: Journal
FILE SEGMENT: 029 Clinical Biochemistry
008 Neurology and Neurosurgery
LANGUAGE: English

AB **Adenylate kinase** has been purified approximately 1360-fold to a final specific activity of 280 μmol of ATP formed min-1xmg-1 of protein at 30°C from normal **human** liver **mitochondria**. The purity of the final preparation was evaluated by studies with polyacrylamide gel electrophoresis and sodium dodecyl sulfate-polyacrylamide gel electrophoresis and by sedimentation studies. The purified enzyme catalyzes transphosphorylation reactions between adenosine triphosphate (ATP) and adenosine monophosphate (AMP). ATP and adenosine-5'-thiophosphate, ATP and adenosine monophosphate-3'-pyrophosphate, adenosine-s'-(3-thio)triphosphate and AMP. The nearly constant ratios of these activities throughout the purification scheme suggest that all are catalyzed by the same enzyme. The purified enzyme has a molecular weight of 25,200 by sedimentation equilibrium with the use of a partial specific volume of 0.73 mlxg-1 calculated from amino acid analysis. This purified enzyme was also found to be a single polypeptide with a molecular weight of 26,500 by sodium dodecyl sulfate-polyacrylamide gel electrophoresis. From amino acid analysis, a calculated minimum molecular weight of 26,349 was obtained. Initial velocity studies revealed a narrow specificity for adenine nucleotides. The Kd' values for MgATP2- and MgATP2-γS1 were 0.12 and 0.57 μM with Vmax.forward values of 1.04 (±0.04)x103 and 7.02x102 μmol x min-1 x mg-1, respectively. For the monophosphate acceptor, Kd' values of 0.56 and 186 μM were measured for 5'-AMP2- and AMP2-αS, respectively. The Kd' for MgADP1- and ADP3- were 0.53 and 0.17 μM with a Vmax.reverse of 6.40(±0.03)x102 μmolxmin-1xmg-1 of protein. The steady state kinetics, at pH 7.4, 30°C, and essentially fixed Δ/2 of 0.16-0.18, of this enzyme seem to be adequately **expressed** by a random quasi-equilibrium type of mechanism with a rate-limiting step largely at the interconversion of the ternary complexes, as shown in rabbit muscle, calf muscle, and calf liver **adenylate kinase**. It would appear that normal **human** liver **mitochondrial adenylate kinase** largely favors the forward reaction (ADP formation). A specific anti-liver enzyme antibody obtained from rabbit serum inhibited the purified liver **mitochondrial** enzyme activity, but not the purified **human** muscle enzyme, nor the aberrant **adenylate kinase** from Duchenne dystrophic serum.

L7 ANSWER 35 OF 39 MEDLINE on STN DUPLICATE 9
ACCESSION NUMBER: 82003493 MEDLINE
DOCUMENT NUMBER: 82003493 PubMed ID: 6944169
TITLE: Characterization of the Philadelphia chromosome by gene mapping.
AUTHOR: Geurts van Kessel A H; ten Brinke H; Boere W A; den Boer W C; de Groot P G; Hagemeijer A; Meera Khan P; Pearson P L
SOURCE: CYTOGENETICS AND CELL GENETICS, (1981) 30 (2) 83-91. Journal code: 0367735. ISSN: 0301-0171.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198111
ENTRY DATE: Entered STN: 19900316
Last Updated on STN: 19900316
Entered Medline: 19811122

AB Chinese hamster X **human** and mouse X **human** somatic cell hybrid lines were obtained using circulating leucocytes from six chronic myeloid leukemia patients. All six patients carried the Ph1 translocation, t(9q+;22q-), characteristic of chronic myeloid leukemia, in their dividing immature granulocytes. Analysis of independent hybrid **clones** yielded the following results: 1. The chromosome 9 markers, soluble aconitase and **adenylate kinase**-1, segregated with the 9q+ derivative. The latter marker has previously been localized to 9q34. 2. The chromosome 22 markers, **mitochondrial** aconitase, N-acetyl-alpha-D-galactosaminidase, and arylsulfatase-A, also segregated with the 9q+ derivative. **Mitochondrial** aconitase has recently been assigned to 22q11 leads to 22q13. No evidence was obtained either for reciprocity of the translocation or for variations in breakpoints in different patients. The results reported in this paper provisionally assign the gene for **mitochondrial** aconitase to a region distal to the breakpoint in 22q11.

L7 ANSWER 36 OF 39 LIFESCI COPYRIGHT 2004 CSA on STN
ACCESSION NUMBER: 81:24127 LIFESCI
TITLE: Characterization of the Philadelphia Chromosome by Gene Mapping.
AUTHOR: Van Kessel, A.H.M.G.; Ten Brinke, H.; Boere, W.A.M.; Den Boer, W.C.; De Groot, P.G.; Hagemeijer, A.; Meera Khan, P.; Pearson, P.L.
CORPORATE SOURCE: Dept. Cell Biol. Genet., Erasmus Univ., P.O. Box 1738, 3000 DR Rotterdam, Netherland
SOURCE: CYTOGENET. CELL GENET., (1981) vol. 30, no. 2, pp. 83-91.
DOCUMENT TYPE: Journal
FILE SEGMENT: G
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Chinese hamster x **human** and mouse x **human** somatic cell hybrid lines were obtained using circulating leucocytes from six chronic myeloid leukemia patients. All six patients carried the Ph super(1) translocation, t(9q+;22q-), characteristic of chronic myeloid leukemia, in their dividing immature granulocytes. Analysis of independent hybrid **clones** yielded the following results: 1. The chromosome 9 markers, soluble aconitase and **adenylate kinase**-1, segregated with the 9q+ derivative. The latter marker has previously been localized to 9q34. 2. The chromosome 22 markers, **mitochondrial** aconitase, N-acetyl- alpha -D-galactosaminidase, and arylsulfatase-A, also segregated with the 9q+ derivative. **Mitochondrial** aconitase has recently been assigned to 22q11 arrow right 22q13. No evidence was obtained either for reciprocity of the translocation or for variations in breakpoints in different patients.

L7 ANSWER 37 OF 39 MEDLINE on STN
ACCESSION NUMBER: 79194246 MEDLINE
DOCUMENT NUMBER: 79194246 PubMed ID: 36399
TITLE: Cytosolic phosphorylation potential.
AUTHOR: Veech R L; Lawson J W; Cornell N W; Krebs H A
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1979 Jul 25) 254 (14) 6538-47.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197909
ENTRY DATE: Entered STN: 19900315
Last Updated on STN: 19990129
Entered Medline: 19790901

AB The tissue contents of the reactants of the myokinase (EC 2.7.4.3) and the combined glyceraldehyde-3-phophate dehydrogenase (EC 1.1.1.29)-3-phosphoglycerate kinase (EC 2.7.2.3) reactions were measured in rapidly inactivated samples of **human** blood and rat brain, muscle, and liver. The tissue contents of the reactants of the creatine kinase (EC 2.7.3.2) reaction were measured in rat brain and muscle. In vitro the value of the **expression**: KG+G = [sigma3PG] . [sigmaATP] . [sigmalactate] KLDH = [sigmaHAP]/22] . [sigmaADP][sigmaPi] . [sigmaRUVATE] (1) was found to be 0.725 x 10(7) M-1 at I = 0.25, T = 38 degrees C, and free [Mg2+] = 0.15 mM and the value measured in vivo in red cell was 0.699 x 10(7) M-1. The value of the **expression** KMYK = ([sigma ATP] [sigma AMP]/[ADP2]) measured under the above conditions and at pH 7.2 was found to be 0.744 while the value found in red cell was 0.784 +/- 0.037. These reactions, therefore, appear to be in a state of near-equilibrium in the red cell and the measured tissue contents of ATP and ADP, which are common reactants in both reactions, approximate closely the activity of these reactants in vivo. In brain and muscle, the value of KG + G/KLDH calculated from the measured tissue contents of the reactants was a factor of 20 or more lower than that expected at equilibrium as was the measured value of the **expression**: KCK = [sigma ATP] [sigma creatine] divided by [sigma ADP] [sigma creatine-P] [H+] (2) Substitution of calculated free [sigma ADP] values in the **expression** of KG + G/KLDH gave values of 0.83 +/- 0.19 x 10(7) M-1 for brain and muscle, respectively, which agreed well with the value of 1.65 x 10(7) M-1 measured in vitro at I = 0.25, free [Mg2+] = 1 mM, T = 38 degrees C. This agreement between two highly active enzyme systems in the same compartment is taken as evidence of the existence of near-equilibrium in both these systems and suggests that free cytosolic [sigma ADP] is probably 20-fold lower than measured cell ADP content in **mitochondrial**-containing tissues.

L7 ANSWER 38 OF 39 MEDLINE on STN DUPLICATE 10
ACCESSION NUMBER: 77221531 MEDLINE
DOCUMENT NUMBER: 77221531 PubMed ID: 195572
TITLE: **Adenylate kinase** 2, a **mitochondrial** enzyme.
AUTHOR: Bruns G A; Regina V M
SOURCE: BIOCHEMICAL GENETICS, (1977 Jun) 15 (5-6) 477-86.
Journal code: 0126611. ISSN: 0006-2928.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197709
ENTRY DATE: Entered STN: 19900314
Last Updated on STN: 19970203
Entered Medline: 19770902

AB The subcellular compartmentalization of the isoenzymes of ATP:AMP

phosphotransferase (**adenylate kinase**) was analyzed in HeLa cells, RAG cells, and RAG-**human** hybrids that **express human** AK-2. In HeLa cells and in the hybrids, **human** AK-2 was present in a mitochemical fraction prepared from cell extracts and in **mitochondria** purified by density gradient centrifugation. **Human** AK-1 was, as expected, distributed in the soluble cytoplasmic fraction of the cells. The rodent isozymes which are homologous to **human** AK-1 and AK-2 have been determined.

L7 ANSWER 39 OF 39 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1977:15881 BIOSIS
DOCUMENT NUMBER: PREV197713015881; BR13:15881
TITLE: ASSIGNMENT OF **HUMAN** GENES BETA GLUCURONIDASE TO CHROMOSOME 7 **ADENYLATE KINASE** 1 TO 9 A 2ND ENZYME WITH ENOLASE ACTIVITY TO 12 AND **MITOCHONDRIAL** ISO CITRATE DEHYDROGENASE TO 15.
AUTHOR(S): GRZESCHIK K-H
SOURCE: Cytogenetics and Cell Genetics, (1976) Vol. 16, No. 1-5, pp. 142-148.
CODEN: CGCGBR. ISSN: 0301-0171.
DOCUMENT TYPE: Article
FILE SEGMENT: BR
LANGUAGE: Unavailable

=> s "HMAK"
L8 9 "HMAK"

=> dup rem l8
PROCESSING COMPLETED FOR L8
L9 4 DUP REM L8 (5 DUPLICATES REMOVED)

=> d 1-4 ibib ab

L9 ANSWER 1 OF 4 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2003:442034 BIOSIS
DOCUMENT NUMBER: PREV200300442034
TITLE: A novel androgen-induced human male germ cell-associated kinase interacts with androgen receptor and modulates androgen receptor-mediated signaling.
AUTHOR(S): Xia, Liang [Reprint Author]; Ma, Ai-Hong [Reprint Author]; Robinson, Dan [Reprint Author]; Kung, Hsing-Jien [Reprint Author]
CORPORATE SOURCE: University of California Davis Cancer Center, Sacramento, CA, USA
SOURCE: Proceedings of the American Association for Cancer Research Annual Meeting, (July 2003) Vol. 44, pp. 178-179. print.
Meeting Info.: 94th Annual Meeting of the American Association for Cancer Research. Washington, DC, USA. July 11-14, 2003.
ISSN: 0197-016X.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 24 Sep 2003
Last Updated on STN: 24 Sep 2003

L9 ANSWER 2 OF 4 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2002485451 MEDLINE
DOCUMENT NUMBER: 22217966 PubMed ID: 12084720
TITLE: Identification of human male germ cell-associated kinase, a kinase transcriptionally activated by androgen in prostate cancer cells.
AUTHOR: Xia Liang; Robinson Dan; Ma Ai-Hong; Chen Hua-Chien; Wu

Frederick; Qiu Yun; Kung Hsing-Jien
CORPORATE SOURCE: Department of Biological Chemistry, School of Medicine, University of California, Davis, California 95616, USA.
CONTRACT NUMBER: CA39207 (NCI)
CA57179 (NCI)
CA82073 (NCI)
DK52659 (NIDDK)
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (2002 Sep 20) 277 (38) 35422-33.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF505623
ENTRY MONTH: 200210
ENTRY DATE: Entered STN: 20020926
Last Updated on STN: 20030105
Entered Medline: 20021024

AB Androgen is involved in both normal development and malignant transformation of prostate cells. The signal transduction pathways associated with these processes are not well understood. Using a novel kinase display approach, we have identified a protein kinase, human male germ cell-associated kinase (**hMAK**), which is transcriptionally induced by the androgenic hormone 5alpha-dihydrotestosterone (DHT). The kinetics of induction is rapid and dose-dependent, and the induction is not blocked by cycloheximide treatment. Real time reverse transcription-PCR studies demonstrated a 9-fold induction of **hMAK** by 10 nm DHT at 24 h post-stimulation. The expression levels of **hMAK** in prostate cancer cell lines are in general higher than those of normal prostate epithelial cells. A reverse transcription-PCR product encompassing the entire **hMAK** open reading frame was isolated. The results from sequencing analysis showed that the **hMAK** protein is 623 amino acids in length and contains a kinase catalytic domain at its N terminus, followed by a proline/glutamine-rich domain. The catalytic domain of this kinase contains sequence motifs related to both the cyclin-dependent kinase and the mitogen-activated protein kinase families. When expressed in COS1 cells, **hMAK** is kinase-active as demonstrated by autophosphorylation and phosphorylation of exogenous substrate and is localized in the nucleus. A 3.7-kilobase pair promoter of the **hMAK** locus was isolated from a human genomic DNA bacterial artificial chromosome clone and was shown to be activated by DHT. This activation can be blocked by an anti-androgen drug bicalutamide (Casodex), implicating the involvement of androgen receptor in this process. Taken together, these data suggest that **hMAK** is a protein kinase targeted by androgen that may participate in androgen-mediated signaling in prostate cancer cells.

L9 ANSWER 3 OF 4 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2000:290852 BIOSIS
DOCUMENT NUMBER: PREV200000290852
TITLE: Mitochondrial adenylate kinase.
AUTHOR(S): Hillman, Jennifer L. [Inventor]; Shah, Purvi [Inventor]
CORPORATE SOURCE: ASSIGNEE: Incyte Pharmaceuticals, Inc.
PATENT INFORMATION: US 6001624 December 14, 1999
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Dec. 14, 1999) Vol. 1229, No. 2. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 6 Jul 2000
Last Updated on STN: 7 Jan 2002

AB The present invention provides a human mitochondrial adenylate kinase (**HMAK**) and polynucleotides which encode **HMAK**. The

invention also provides expression vectors, host cells, agonists, antisense molecules, antibodies, or antagonists. The invention also provides methods for treating disorders associated with expression of **HMAK**.

L9 ANSWER 4 OF 4 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1999-00127 BIOTECHDS
TITLE: Human mitochondrial adenylate-kinase, **HMAK**; sense, antisense sequence, antibody, agonist and antagonist used for cancer, neurological and immunological disorder diagnosis and therapy
AUTHOR: Hillman J L; Shah P
PATENT ASSIGNEE: Incyte-Pharm.
LOCATION: Palo Alto, CA, USA.
PATENT INFO: WO 9844124 8 Oct 1998
APPLICATION INFO: WO 1998-US6249 30 Mar 1998
PRIORITY INFO: US 1997-829027 31 Mar 1997
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1998-557119 [47]
AB A purified mitochondrial adenylate-kinase (EC-2.7.4.3) with a given protein sequence is claimed. Also claimed is a nucleic acid encoding the kinase, of given nucleotide sequence, and that hybridizes, under stringent conditions, with the given nucleic acid sequence. The claims also cover a nucleic acid complementary to the given sequence, and a DNA probe that constitutes part of that complementary sequence. Also covered are an expression vector containing the given nucleic acid sequence, a host cell transformed by that vector, and a means of preparing the adenylate-kinase by culturing the transformed cell, and recovering the protein. The claims extend to a composition containing the adenylate-kinase, and an antibody, agonist and antagonist of the protein. These are used to treat neurological disorders, cancer and immunological disorders. Also claimed is a means of detecting nucleic acids encoding mitochondrial adenylate-kinase in a sample using the DNA probe, and detecting the hybridization complex. The nucleic acids can also be administered for gene therapy. (63pp)

=> d his

(FILE 'HOME' ENTERED AT 09:49:55 ON 13 FEB 2004)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 09:53:32 ON 13 FEB 2004
L1 11486 S ADENYLATE (A)KINASE?
L2 2883 S HUMAN AND L1
L3 646823 S MITOCHONDRI?
L4 274 S L2 AND L3
L5 6366884 S CLON? OR EXPRESS? OR RECOMBINANT
L6 67 S L4 AND L5
L7 39 DUP REM L6 (28 DUPLICATES REMOVED)
L8 9 S "HMAK"
L9 4 DUP REM L8 (5 DUPLICATES REMOVED)

=> e hillman j l/au
E1 81 HILLMAN J J/AU
E2 5 HILLMAN J K/AU
E3 470 --> HILLMAN J L/AU
E4 1 HILLMAN J M/AU
E5 4 HILLMAN J M L/AU
E6 2 HILLMAN J O/AU
E7 9 HILLMAN J P/AU
E8 243 HILLMAN J R/AU
E9 2 HILLMAN J RICHARD/AU

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E10          111     HILLMAN J S/AU
E11           21     HILLMAN J T/AU
E12           10     HILLMAN J V/AU

=> s e3
L10          470 "HILLMAN J L"/AU

=> e shah p/au
E1             1     SHAH OMAR JAMEEL/AU
E2             4     SHAH OMAR JAVED/AU
E3          1520 --> SHAH P/AU
E4           145     SHAH P A/AU
E5           122     SHAH P B/AU
E6           214     SHAH P C/AU
E7            51     SHAH P D/AU
E8             1     SHAH P E/AU
E9            64     SHAH P G/AU
E10            3     SHAH P G S/AU
E11           57     SHAH P H/AU
E12            5     SHAH P I/AU

=> s e3
L11         1520 "SHAH P"/AU

=> s l10 or l11
L12         1868 L10 OR L11

=> d his

     (FILE 'HOME' ENTERED AT 09:49:55 ON 13 FEB 2004)

     FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
     LIFESCI' ENTERED AT 09:53:32 ON 13 FEB 2004
L1          11486 S ADENYLATE (A)KINASE?
L2           2883 S HUMAN AND L1
L3         646823 S MITOCHONDRI?
L4            274 S L2 AND L3
L5        6366884 S CLON? OR EXPRESS? OR RECOMBINANT
L6             67 S L4 AND L5
L7             39 DUP REM L6 (28 DUPLICATES REMOVED)
L8              9 S "HMAK"
L9              4 DUP REM L8 (5 DUPLICATES REMOVED)
                  E HILLMAN J L/AU
L10           470 S E3
                  E SHAH P/AU
L11          1520 S E3
L12          1868 S L10 OR L11

=> s l1 and l12
L13             3 L1 AND L12

=> dup rem l13
PROCESSING COMPLETED FOR L13
L14             3 DUP REM L13 (0 DUPLICATES REMOVED)

=> d 1-3 ibib ab

L14  ANSWER 1 OF 3  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER:   1999:73156  BIOSIS
DOCUMENT NUMBER:    PREV199900073156
TITLE:              Mitochondrial adenylate kinase.
AUTHOR(S):          Hillman, J. L. [Inventor]; Shah, P.
                    [Inventor]
CORPORATE SOURCE:   San Jose, Calif., USA
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ASSIGNEE: INCYTE PHARMACEUTICALS, INC.
PATENT INFORMATION: US 5856160 Jan. 5, 1999
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Jan. 5, 1999) Vol. 1218, No. 1, pp. 364. print.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 1 Mar 1999
Last Updated on STN: 1 Mar 1999

L14 ANSWER 2 OF 3 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1999-00127 BIOTECHDS
TITLE: Human mitochondrial **adenylate-kinase**, HMAK;
sense, antisense sequence, antibody, agonist and antagonist used for cancer, neurological and immunological disorder diagnosis and therapy
AUTHOR: **Hillman J L; Shah P**
PATENT ASSIGNEE: Incyte-Pharm.
LOCATION: Palo Alto, CA, USA.
PATENT INFO: WO 9844124 8 Oct 1998
APPLICATION INFO: WO 1998-US6249 30 Mar 1998
PRIORITY INFO: US 1997-829027 31 Mar 1997
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1998-557119 [47]
AB A purified mitochondrial **adenylate-kinase** (EC-2.7.4.3) with a given protein sequence is claimed. Also claimed is a nucleic acid encoding the kinase, of given nucleotide sequence, and that hybridizes, under stringent conditions, with the given nucleic acid sequence. The claims also cover a nucleic acid complementary to the given sequence, and a DNA probe that constitutes part of that complementary sequence. Also covered are an expression vector containing the given nucleic acid sequence, a host cell transformed by that vector, and a means of preparing the **adenylate-kinase** by culturing the transformed cell, and recovering the protein. The claims extend to a composition containing the **adenylate-kinase**, and an antibody, agonist and antagonist of the protein. These are used to treat neurological disorders, cancer and immunological disorders. Also claimed is a means of detecting nucleic acids encoding mitochondrial **adenylate-kinase** in a sample using the DNA probe, and detecting the hybridization complex. The nucleic acids can also be administered for gene therapy. (63pp)

L14 ANSWER 3 OF 3 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1999-00096 BIOTECHDS
TITLE: DNA sequences encoding deoxyguanosine-kinase;
useful for recombinant production of the enzyme for treating diseases by lack of the enzyme e.g. cancer caused through loss of enzyme function
AUTHOR: Bandman O; **Hillman J L**; Hawkins P R; Guegler K J; Corley N C
PATENT ASSIGNEE: Incyte-Pharm.
LOCATION: Palo Alto, CA, USA.
PATENT INFO: US 5817482 6 Oct 1998
APPLICATION INFO: US 1997-879561 20 Jun 1997
PRIORITY INFO: US 1997-879561 20 Jun 1997
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1998-556388 [47]
AB An isolated DNA sequence (I) is claimed which encodes a deoxyguanosine-kinase (DK) (EC-2.7.1.113) of specified sequence. Also claimed are: an expression vector and host cell containing (I); a

complement of (I); compositions comprising (I) or (DK); and a method for detecting a DNA sequence encoding a (DK) in a biological sample. (DK) catalyzes the transfer of a terminal phosphate from ATP or GTP to guanosine or guanidine in the regulation of cellular levels of GTP. GTP levels are known to control the activity of certain oncogenic proteins e.g. p21ras. Suppression of (DK) activity causes high ratios of GTP:GDP, promoting oncogenesis. Diseases, e.g. cancers, immune disorders and neurological dysfunction related to this lack of activity may be prevented or treated with the recombinant enzyme, or by gene therapy. The enzyme itself may also be used to raise antibodies against it. Antisense DNA of (I) may also be used for inhibition of (DK) over-expression. Also disclosed are DNA sequences, host cells and recombinant production of **adenylate-kinase** (EC-2.7.4.3), deoxycytidine-kinase (EC-2.7.1.74) and adenosine-5'-phosphosulfate. (53pp)

=> d his

(FILE 'HOME' ENTERED AT 09:49:55 ON 13 FEB 2004)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 09:53:32 ON 13 FEB 2004

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L1         11486 S ADENYLATE (A)KINASE?
L2          2883 S HUMAN AND L1
L3        646823 S MITOCHONDRI?
L4           274 S L2 AND L3
L5       6366884 S CLON? OR EXPRESS? OR RECOMBINANT
L6            67 S L4 AND L5
L7            39 DUP REM L6 (28 DUPLICATES REMOVED)
L8             9 S "HMAK"
L9             4 DUP REM L8 (5 DUPLICATES REMOVED)
                 E HILLMAN J L/AU
L10          470 S E3
                 E SHAH P/AU
L11         1520 S E3
L12         1868 S L10 OR L11
L13            3 S L1 AND L12
L14            3 DUP REM L13 (0 DUPLICATES REMOVED)
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	Issue Date	Pages	Document ID	Title
1	20040212	570	US 20040029114 A1	Methods of diagnosis of breast cancer, compositions and methods of screening for modulators of breast cancer
2	20040129	219	US 20040018594 A1	Novel antibodies that bind to antigenic polypeptides, nucleic acids encoding the antigens, and methods of use
3	20040129	169	US 20040018527 A1	Differential patterns of gene expression that predict for docetaxel chemosensitivity and chemo resistance
4	20040122	230	US 20040016025 A1	Rice promoters for regulation of plant expression
5	20040122	146	US 20040014040 A1	Cardiotoxin molecular toxicology modeling
6	20040108	64	US 20040005559 A1	Markers of neuronal differentiation and morphogenesis
7	20040101	106	US 20040002067 A1	Breast cancer progression signatures
8	20031211	206	US 20030228570 A1	Methods of diagnosis of Hepatitis C infection, compositions and methods of screening for modulators of Hepatitis C infection
9	20030306	202	US 20030044783 A1	Human genes and gene expression products
10	20030227	198	US 20030040617 A9	Nucleic acids, proteins and antibodies

	Issue Date	Pages	Document ID	Title
11	20020704	31	US 20020086393 A1	Mitochondrial adenylate kinase
12	20020509	194	US 20020055627 A1	Nucleic acids, proteins and antibodies
13	20020101	227	US 6335170 B1	Gene expression in bladder tumors
14	20011218	87	US 6331396 B1	Arrays for identifying agents which mimic or inhibit the activity of interferons
15	20001121	62	US 6150091 A	Direct molecular diagnosis of Friedreich ataxia
16	19991214	32	US 6001624 A	Mitochondrial adenylate kinase
17	19990105	32	US 5856160 A	Mitochondrial adenylate kinase
18	19870519	14	US 4666828 A	Test for Huntington's disease

	Issue Date	Pages	Document ID	Title
1	20020704	31	US 20020086393 A1	Mitochondrial adenylate kinase
2	19991214	32	US 6001624 A	Mitochondrial adenylate kinase
3	19990105	32	US 5856160 A	Mitochondrial adenylate kinase

	L #	Hits	Search Text
1	L1	425	adenylate adj kinase$2
2	L2	392924	human
3	L3	82	l1 same l2
4	L4	8	mitichondri$4
5	L5	14038	mitochondri$4
6	L6	31	l3 same l5
7	L7	599452	clon$3 or express$3 or recombinant
8	L8	18	l6 same l7
9	L9	97	"hmak"
10	L10	97	l2 same l9
11	L11	3	l7 same l10
12	L12	923	hillman.in.

	L #	Hits	Search Text
13	L13	2566	shah.in.
14	L14	3351	l12 or l13
15	L15	4	l3 and l14